

Pooley (J. H.)

Enuresis Nocturna, Incontinentia Urinæ, Mictio
Involuntaria, Incontinence of Childhood, Etc.

*A paper read before the Columbus Academy of Medicine, by J. H.
Pooley, M.D., Professor of Surgery in Starling
Medical College, Columbus, Ohio.*

[FROM LANCET AND OBSERVER, DECEMBER, 1875.]

Surgeon Genl's Office.
LIBRARY
69928
Washington, D.C.

ROBT. CLARKE & CO., PRS.



Enuresis Nocturna, Incontinentia Urinæ, Mictio Involuntaria, Incontinence of Childhood, Etc.

A paper read before the Columbus Academy of Medicine, by J. H. Pooley, M.D., Professor of Surgery in Starling Medical College, Columbus, Ohio.

[FROM LANCET AND OBSERVER, DECEMBER, 1875.]

Under these, and various other appellations, is described a peculiar affection of childhood, which is the most obstinate and vexatious of all the various forms of urinary incontinence; and which, being at the same time very common, is eminently deserving of our careful study.

I presume there is no practitioner of medicine who has not had his patience tried, over and over again, by these cases, and who has not, in some of them, prescribed various medicines, until he thought he had exhausted the materia medica, and given up at last in despair and disgust.

The affection occurs most generally in children from the age of two years to nine or ten, though sometimes, it continues longer, even up to puberty, and in a few cases, even beyond this. Its characteristic phenomena is that the child, who has no trouble of the kind during the day, regularly and invariably has an involuntary discharge of urine at night—in other words, wets the bed.

This commonly occurs during the first sound sleep of the night, or two or three hours after going to bed, and as the discharge is generally copious, the results are disagreeable and unpleasant in the extreme. The bedding is soiled, and, from the constant repetition of the act, eventually completely spoiled; the protection of a rubber blanket, and every other means that can be employed

proves an inadequate defense, and in time the apartment acquires a permanent urinous and offensive odor. The child, if not absolutely waked up by the occurrence, is rendered uneasy and fretful for the night, and if, as so often happens, it throws off the bed-clothes, is apt to catch cold, added to which, in some cases, abrasions and even ulcerations have been known to occur from the urinous contact. From these causes, as well as from those which may lie at the bottom of the malady itself, children who have long been subject to it frequently have a sickly and emaciated appearance. In the majority of cases the affection is a nocturnal one, the involuntary micturition is confined to the night; in some, however, it occurs also during the day, and especially whenever the child is excited, agitated, or frightened. The urine in these cases is healthy, as a rule, though it has been supposed by some authors to contain an abnormal proportion of lithates, or other irritating ingredients. But actual examinations, so far as recorded, show that, in all but a few clearly exceptional cases, this secretion is perfectly healthy. A number of the children thus affected are pale, thin and cachectic in appearance, though others, perhaps an equal number, are perfectly healthy, as far as the eye, even of a physician, can discern; there is nothing the matter with them except that they wet their beds at night. And, as already hinted, it is worthy of thought how far the unhealthy appearance of these children is the result, rather than the cause of their unfortunate infirmity.

The disease is more common in boys than in girls. This is clearly the result of my own observations in the matter; of all the cases I have seen, and they have not been few, I should say four out of five had been in boys. And this is the verdict of all the authors but one who have noticed the matter at all, the exception being Guersant, who alone states that the complaint is equally common in girls and boys, but in this I am sure he is mistaken. Many writers who do not distinctly mention this point, leave it to be clearly inferred by their language, and by the constant use of the masculine pronoun in their descriptions, that they were aimed principally at the male sex.

Vogel says that it is *much more* frequent in boys than in girls. Caspar and Bierbaum (*Journal für Kinder Krankheiten*), make the same statement. Holmes, in his work on the Surgical Diseases of children, says: "There can be no question that boys are by far more liable to this disease than girls, the reason for which is far from clear." I shall take issue with him on this last point, for not

only am I sure that the disease is more frequent in boys, but the reason seems to me clear enough in the more complex arrangement of their urinary apparatus, and its consequently greater liability to become the seat of those reflex irritations which I believe to be the principal exciting causes of the trouble.

Bierbaum says that the children of parents who suffer from certain forms of gout, will be affected up to the time of manhood with an obstinate nocturnal enuresis, whatever form of treatment may be adopted. This, I confess, seems to me very fanciful and problematic. Scrofula, worms, or, as it is called, helminthiasis, digestive derangement, obscure derangement of the brain, etc., are also enumerated among the causes, with what propriety I will not undertake to say, though I fear they are generally adopted as explanations because the practitioner has not searched carefully and intelligently for a more real one, or, at any rate, simply because he has not found it, and must have one of some kind.

Spinal irritation of various kinds seems a more probable cause. Holmes says that the worst case he ever saw was in a case of spinal caries, and that was in a girl.

By far the most frequent causes are to be found in an abnormality or irritation of the urinary organs themselves. And here we enumerate stone in the bladder, kidneys, ureter, or urethra, phimosis, narrow or adherent prepuce, excessive or retained smegma, congenital narrowness of the meatus urinarius, and excessive sensibility of some portion of the urethra, generally the membranous bulbous junction. Not very infrequently, nocturnal incontinence will be the *only* symptom of vesical calculus in a child, at least for a time. I have had two cases in young patients where this was the only thing complained of, and it was only on the introduction of a sound for purposes of examination, and without any previous suspicion of the fact, that the stone was discovered.

Hence, I am disposed to insist that the first thing to be done when a patient is brought to us suffering from nocturnal enuresis, is to introduce a sound into the bladder; and all the more, because the attempt to do so will lead to the discovery, if it exist, of the next cause I have to speak of—phimosis. In sounding a child, it should always be under the influence of an anæsthetic. And here pardon me if I digress for a moment, to say that the difference between physicians lies not so much in any one's superior control of therapeutic resources, as his greater care and thoroughness in examining his cases. If stone in the bladder is found, it is unnecessary to

say that it should be removed; this was done in my cases, and the incontinence, which was the only symptom, thus cured. Calculus in the kidney, urethra, or ureter, would be less likely to be overlooked, and the mere mention of its possible existence as a cause is all that is needed. Phimosis, and the allied condition of too narrow prepuce, adhesions between it and the glands, and excessive and retained smegma, are, I believe, the most frequent causes of the disease we are studying, and unfortunately, I know are frequently overlooked. Absolute phimosis, or the condition of the prepuce in which it is too narrow to allow of the exposure of any part of the glands, as well as that minor degree of narrowing, in which the glands can only be uncovered with considerable difficulty, should always be looked upon as a sufficient cause of nocturnal enuresis, when they exist together, and be at once remedied by the operation of circumcision. In many of these cases, adhesions, more or less firm and numerous, may be found between the glands and prepuce; these should, of course, be thoroughly removed. They may, perhaps, exist independent of phimosis, though I have never known of such a thing, but none the less they must be completely torn apart, and kept from reuniting by the interposition of a layer of oiled linen for a sufficient length of time.

There are other cases where, without phimosis, but generally in connection with a more or less redundant prepuce, there is an unusually copious secretion of smegma, or the sebaceous matter peculiar to the glans penis, which is seen accumulated in very considerable quantity in the sulcus behind the corona glandis; in addition to increase in quantity, it is also changed in character, and becomes irritant, as may be inferred from its penetrating odor, and the redness of the mucous membrane around the accumulation. In these cases, I believe that, equally with those mentioned above, circumcision is demanded, or, at least, if not absolutely demanded, is the best and easiest remedy.

I might cite a great number of cases where I have performed the operation of circumcision on children who wetted their beds, and in whom the conditions above spoken of existed, and with complete success, but I will content myself with simply stating the fact, and only adduce one case, from the practice of a neighbor and friend of mine, in further illustration. A young gentleman, about eighteen years of age, came to him, and told him that he was troubled with wetting the bed, that he had had this miserable

infirmity ever since childhood, had been to a great many physicians, and taken no end of medicine, all without any permanent benefit, although sometimes he seemed to get better for a while.

The doctor asked to see his penis; the young man seemed very much surprised at this, and stated that no one had ever examined it before that he knew of. Phimosis was found to exist, and the doctor told him he believed this was the cause of his trouble, and that circumcision would cure him; the operation was performed, and with the result promised, a perfect and permanent cure. In addition to phimosis and its allied conditions, there is another, much rarer, and, indeed, scarcely recognized at all in the profession, which is sometimes the cause of enuresis, and that is congenital narrowness, sometimes almost to occlusion of the meatus urina-rius itself. I have spoken of this as a congenital condition, and, as far as I know, with one exception, it always is so, the exception I refer to occurs in the circumcised children of Israel. In them, sometimes, in the performance of the bloody rite, the end of the penis itself is slightly wounded, and cicatrization and contraction occludes, more or less, the meatus. I have observed this quite frequently.

The accidental occlusion, however, is not so often provocative of enuresis as the congenital; I have seen only one case where it produced it. This congenital narrowing is rare, but as it every now and then occurs, it ought to be remembered and looked for in every case. If this form of stricture is found to exist, it may be treated by dilatation, but this method is both tedious and unsatisfactory; a better plan, by all means, is to divide it either by a bistoury and director, or, better still, with the little instrument known as a meatotome. Directions for this simple procedure may be found in any of the surgical works.

Dilation with a good sized bougie, every two or three days, must be kept up till the little wound heals, when the cure will be permanent. Sometimes there exists an abnormal sensitiveness or irritability at a spot in the deep urethra, just at the bulbo-membranous junction, which excites reflex action of the bladder during sleep, and determines the emission of urine, just as a similar condition in older patients excites a seminal emission. This condition may be ascertained by the introduction of a steel bougie, when, upon its touching the sensitive spot, a peculiar shuddering is experienced, which is diagnostic. It is said that this condition sometimes demands the application of nitrate of silver, either in solid stick or

solution ; this I imagine, must be very rarely the case ; all that is generally needed is the introduction of a solid instrument, daily at first, then with gradually increasing intervals ; this treatment, some authors assert, will cure enuresis, even when there is none of the peculiar sensitiveness of which we have spoken ; and one thing may at least be said in its favor, that thus a stone may be hit upon when least expected.

In concluding this part of my subject, I desire to quote, with approbation, the following sentence from Mr. J. Cooper Foster's work on the surgical diseases of children. He says: "Always, the assumption should be that there exists a calculus, or other mechanical cause, until its absence has been demonstrated by careful exploration." I am persuaded that if this good rule were faithfully followed, there would be much fewer of the obstinate and irremediable cases of which we hear, and the reproach that now so universally attaches to us in the treatment of this disease, would be largely wiped away. But yet, after all due allowance has been made for the frequency of those instances where a reflex irritation from the causes mentioned is at the root of the malady, there still remains a class of cases where no such cause is discoverable, whose pathology is mysterious, and whose treatment is, at times, eminently uncertain and vexatious.

No doubt, in some of these, the complaint is simply the result of a bad habit, which, however, becomes so thoroughly engrafted in time, as to constitute a real disease ; indeed, it is a wide, practical question, whether many of what we call functional diseases are not the result of depraved physical habit ?

Such cases may, perhaps, sometimes be reached by such truly moral means as shall enlist the strongest exertion of the little patient on the side of cure, though generally punishment and threatening are to be avoided ; I would rather suggest promises of reward. Vogel mentions one case, Bierbaum three, and Cooper Foster one, in which fear of punishment had led boys to tie a string tightly around the penis to prevent the discharge of urine, with the disagreeable result—the *rather* disagreeable result, Mr. Holmes naively calls it—of producing sloughing of the organ ; there are other cases on record, but they are not within my reach at present.

Sometimes the disease appears to be, in some sort, contagious, or, at any rate, to spread by imitation or sympathy ; this is apt to be the case in schools or charitable institutions ; such an occurrence

like that of imitative epilepsy or chorea, will suggest its own remedy. In a case where the habit had spread through a whole school, Casper assembled them all and touched three lightly with the actual cautery, threatening all the rest with the same; all were cured.

Various mechanical appliances, intended to occlude the urethra, have been advised and used from time to time; these consist of so-called juga, or yokes, to compress the penis, or of a truss to press the urethra in perineo. Two forms of juga and one of a truss for this purpose are figured in Heister's *Surgery*, edition of 1743. A more recent plan is the use of a broad elastic band of India rubber.

I can not help thinking that all such contrivances should be discountenanced. If tight or firm enough to do good, they are surely capable of doing harm; at any rate, they keep up a reflex irritation of their own; and, even if successful while in use, they tend, actually, to perpetuate the evil, which is likely to be worse than ever when they are discontinued; and, furthermore, they provoke attention to the organ, and handling of it, a thing, especially in older boys, to be on all accounts avoided.

In an article on the treatment of incontinence of urine in children, by Sir Dominick J. Conigan, in the Dublin Quarterly Journal of Medical Science, he describes the results of a successful mechanical treatment by collodion. While the prepuce, slightly curved, is held with the left hand, collodion is smeared over the little cap thus formed by the extremity of the prepuce, by means of a camel-hair pencil, or other blunt instrument; the collodion instantly solidifies, draws together the edges of the prepuce, and closes the exit for escaping urine. A fortnight's use of it diligently and carefully every night is sometimes sufficient for the cure. When it is desired to pass urine, the little wedge or cap of collodion is easily removed by the finger nail. Contrary to what might be expected, the patient is not compelled to rise at night to urinate; on rising in the morning, the prepuce is found slightly distended with urine. From this, Dr. Conigan infers that the escape of the urine is rather due to want of opposition in the sides of the canal of the urethra, or to a feeble state of the circular fibres which are supposed to construct the sphincter at the neck of the bladder. The bed should be raised at the bottom, so as to form an inclined plane from the hips to the feet, so as to allow the urine in the bladder to gravitate toward the fundus rather than toward the trigone. Dr.

Conigan objects to the usual practice, sanctioned by the recommendation of some medical authorities, that the child should be awakened at stated intervals to pass his urine; believing that the bladder is thus trained to empty itself at stated intervals, instead of being accustomed to retain its contents.

I have no experience with the plan of Dr. Conigan, but have heard instances of its success in the hands of others.

There are certain points in the management of these children that are important; their supper, or last meal before going to bed, should be as dry as possible; especially should they avoid drinking much water at that time; they should be made to pass water just before retiring, and when the parents go to bed some hours later, they should, Dr. Conigan to the contrary notwithstanding, be taken up to pass it again. I will just mention a case in point: one of my own children, a little boy of about two years, began to wet his bed regularly every night; I told his mother when she went up, to take him out and let him make water; this he would do, generally, without waking, and sleep dry till morning; in a few months the trouble passed off. The first sleep of children is very sound, and the sphincter of the bladder comparatively delicate and weak; hence, a distension which will overcome the resistance of the muscular fibres does not waken the child, and he wets the bed. Sometimes these children, though not thoroughly awakened, are sufficiently aroused to convert their uneasy sensations into the perverted consciousness of a dream, and they think they are sitting upon the chamber-pot, or standing over it as usual, and I have known older boys to say they thought they were standing against a tree or fence and firing away all right. Some have said that the occurrence takes place only when the children are lying on their back, and have proposed fixing a knot over the sacrum to prevent it, and, as this is very liable to become displaced, others have blistered the sacrum for the same purpose. All this seems to me sheer nonsense: in the first place, the proof of the assertion that such children lie on their backs more than others is wanting; I know that all do not; and, again, if they did, I fail to see that it establishes anything like cause and effect in the matter.

Blister and actual cautery to the perineum and around the anus have been recommended. These are pretty severe measures, particularly the latter; if any one is inclined to try it, I would suggest, as the most convenient and elegant method, the heating of a glass rod in the flame of a spirit-lamp. As remedies, both partly

local and partly acting through the system at large, baths and douches of various kinds have been recommended. These have been used both hot, warm, and cold; in the form of sponging, sitz-baths, and dashes or streams, and also with the admixture of ingredients of the most varied description. Lallemand advised hot baths in which were mixed aromatic herbs of various kinds, with brandy or other spirits. Both warm and cold baths with various saline and sulphurous ingredients, such as common salt, sea salt, the salts of Marienberd, sulphuret of potash, etc., have had their advocates. I have had no experience with any of these except the simple cold sitz-bath, just before retiring, and this I can cordially recommend, having found it very efficacious in many cases. The water should be quite cold, the child allowed to remain in it but for a few minutes, and then dried and well rubbed and put to bed. That the application of cold water to the hips or even to the feet and legs, has some decided effect upon the innervation of the bladder, is, I suppose, a common personal experience with us all. For who has not experienced, during such an application, a temporary sensation of desiring to urinate? So that such an application, beside its good general effect, has a decided local influence as well, and should always be used, as an adjunct at least, to other treatment; if it is inconvenient, cold sponging will answer nearly as well.

Before speaking of the drugs that are believed to have a special influence on this disease, we may, perhaps, be pardoned for remarking, that every attention should be paid to the general health, and every discoverable derangement of function rectified, if possible. Among the drugs recommended, there are some which seem to have received the suffrages of a majority of authors and practitioners, and are probably deserving, to some extent, of their reputation. Foremost among these are belladonna, strychnine, and the muriated tincture of iron.

Belladonna seems to be the most popular of all, and was a special favorite with Trousseau; indeed, this eminent physician seems to have had a mild craze on the subject of belladonna, for he used it a great deal for a great many things. The extract may be administered, beginning with doses of one-tenth or one-eighth of a grain, gradually increased until some of its physiological effects, such as dilated pupils and dryness of the fauces, make their appearance; the dose must then be slightly diminished and continued at what we call the point of toleration for a considerable time.

Strychnine has also been found useful; it may be given in doses of one-fortieth or one-thirtieth of a grain, to commence with, and cautiously increased. These two remedies seem to have given more satisfaction than any others, and I have certainly seen good results follow their administration in these cases.

Ergotine has been recommenced; and, though I know nothing personally of its use in this disease, should regard it with favor, as its action on unstripped muscular fibre is very similar to that of the two drugs just mentioned, but it is by no means so safe to continue its administration for a long time.

Tincture of muriated iron is another favorite; and, no doubt, in addition to its general tonic properties, may do good in this disease, for it has a very decided action on the urinary organs; it may be given in doses of anywhere from five to twenty drops, three times a day, in water. Cantharides is another remedy well spoken of by some; I have used it repeatedly, and with some success; I have never given more than ten drops of the tincture, three times a day, to a little child. Fowler's solution in doses of from three to five drops, three times a day, is, occasionally, a useful prescription. Creosote has been recommended, but I know nothing about it. I succeeded perfectly and very rapidly in curing a case, quite recently, by giving a dose of chloral hydrate, about five grains, I think, at bed-time. The patient was a boy about nine years old, and in one week was perfectly cured by this medicine.

I have now mentioned all the principal drugs advised in the treatment of this annoying complaint, but a great many others have been praised by individual writers; such as iodine, cod-liver oil, quinine, cinchona, benzoic acid, balsam copaiba, cubebs, tannin, camphor, nitrate of potash, etc. Gross speaks encouragingly of the use of anodyne enemata, and suppositories, especially the latter, in obstinate cases.

I did not expect either to offer anything new on this subject, or to treat it exhaustively; I have simply aimed at a resumé, or outline, of what was most interesting and important in regard to it.

I will say, in conclusion, that if we carefully exclude causes of reflex irritation, pay attention to the general health of the patient, use the cold hip-baths as auxiliary to other modes of treatment, we shall generally find that, with a fair perseverance with the remedies mentioned, we shall succeed in curing almost, if not quite, all of these cases.

